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South China is Ready for U.S. Alfalfa

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Report Highlights:
South China's robust economy, growth of the dairy industry, receptive dairymen, greater demand for milk by increasingly health conscious consumers and favorable import tariffs, coupled with raw milk shortfalls point to market opportunities for U.S. alfalfa, key to a balanced dairy diet. Challenges associated with the region's subtropical climate and lack of quality forage at favorable prices adversely impact milk production, reproduction and health. Since 2004, ATO/Guangzhou has promoted the use of U.S. alfalfa in South China, and dairymen have taken notice.

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Holsteins on a South China farm savor U.S. alfalfa

Historically, dairy products have not been a significant part of the southern Chinese diet. That is steadily changing, especially in prosperous urban areas. Recognizing growing demand, dairy cows were introduced about forty to fifty years ago. Southern China dairy farmers have made highly significant advances in breeding, feeding and overall management during recent years that have led to improved milk production.

However, there are special challenges that center around feed, climate and dairy cattle health issues. The high price of land in and around densely populated cities reduces pastureland. Thus, dairy cows in South China have traditionally been confined to barns or corrals and fed fresh corn stalks, corn silage or freshly cut grasses. With such feeds, it is hard to supply balanced diets to maintain sound body condition and ensure satisfactory production, reproduction and animal health. Incorporating large amounts of grain or grain by-products and protein supplements has been used to compensate for low forage quality. This approach often creates health and production problems as an adequate amount of good quality forage is critical in maintaining proper rumen function and avoiding metabolic diseases such as *acidosis* (excessive acid in the rumen due to low amounts of forage intake).

Additionally, the Holstein breed, which is used predominantly in South China herds, and even those, albeit to a lesser extent, of the Jersey breed, were developed for use in cooler climates than can be found in southern Chinese provinces. Heat stress has a detrimental effect on these and other breeds of dairy cows worldwide. However, the hot, humid weather in South China and elsewhere, poses a special challenge for dairymen. Milk production and reproduction suffer if weather conditions are ignored. Careful attention must be given to modifying diets and providing housing and facilities (e.g., fans and water sprinklers) that will minimize heat stress problems and enhance cow comfort. Diet and climate related difficulties are sometimes worsened by uninformed care of the cows by the farmers. For example, dairymen often do not realize the extent to which stressed cows adversely affect milk production. An average cow in South China produces four to five metric tons (MT) of milk a year while a cow in the Southern United States produces eight to ten, mainly due to the lack of quality forage and heat stress.

To tackle these problems, ATO/GZ initiated and developed a Dairy Improvement Project in 2004-2006 with the assistance of the U.S. *National Hay Association (NHA).* This Project had several approaches to improving the South China Dairy industry. During the initial phase of the Project, veterinarians and U.S. dairy specialists were brought in to provide educational programs for the dairy industry and to consult with farmers. The ATO/GZ and the NHA cooperated in a second phase of the Project wherein research studies were instigated and conducted on three South China dairy farms to evaluate the effectiveness of U.S. alfalfa hay for lactating cows. The third phase of the Project included meetings sponsored by ATO/GZ,

NHA and local dairy associations. Management recommendations, research results and hay marketing information were presented. In addition, NHA personnel made farm visits as well as feeding and management recommendations during this period.

The receptive Chinese dairymen became convinced of the need to improve management techniques, reduce heat stress, improve cow comfort and provide quality forage. The effectiveness of quality alfalfa as a forage was of great interest. Another selling point for alfalfa relates to increased forage intake due to better palatability which in turn not only gives cows more nutrients to produce milk but also maintains better body condition which helps with breeding management and health issues.

Over the past several years, various dairy associations believe that an optimum goal in South China is to boost a cow's average production to six tons of milk a year. The ATO/GZ–NHA Project has helped these associations reaffirm that such a goal is realistic. Improved management, cow comfort and quality forage ensure economical milk production, enhanced reproduction and optimal health. Quality alfalfa is key to balanced dairy diets.

Nonetheless, it isn't easy for South China dairymen to have access to alfalfa. A solution would be to grow alfalfa locally, but conditions are not conducive as there are heavy rains and heat. Alfalfa could be sourced from northern provinces such as Ganshu, Inner Mongolia, Shan'xi and Shandong. However, transportation costs climb steeply as gasoline prices increase and government agents penalize overloaded trucks sourced from the north. Moreover, supply from that region can be spotty, of low quality and relatively expensive. Industry sources say, even North China dairymen don't use enough forage in feed rations which result in lower than expected milk production. Their growing demand for domestic grown alfalfa further limit access from South China and escalate the prices. Therefore, careful monitoring of costs for delivered alfalfa and availability from North China is essential in determining feasibility of exporting alfalfa. ATO/GZ is collecting data on acreage and production of Chinese alfalfa. It does not foresee production increases as alfalfa competes with major field crops, including cereals and oil seeds.


Field of cut alfalfa in the United States

At this time, competition for baled alfalfa from other countries' exporters is negligible. The last time U.S. alfalfa was exported to South China was from the early 1980's to 2000. A U.S. invested dairy farm was the only customer. Now after a six year hiatus and as a result of recent ATO/GZ–NHA marketing efforts outlined above, several South China dairy farms are placing orders, mostly for the grade of "good" alfalfa (Crude Protein or "CP" 18-20%, Relative Feed Value or "RFV" 150-170) sold at about CIF US$200 per MT. "Premium" grade is sold at CIF US$230 and may become affordable if the Chinese "renminbi" (RMB) continues to appreciate. Due to the lack of a national grading system for alfalfa in China, Chinese dairymen need to be educated about more scientific ways to discern quality differences rather than subjective sensory evaluation such as color and texture. Effective fiber gauged by RFV or the RFQ value now available with some laboratories are important measures of quality.

Before the baled alfalfa is shipped overseas, it must be fumigated. After fumigation, a phytosanitary certificate issued by the USDA *Animal and Plant Health Inspection Service (APHIS)* must be provided to the Chinese importer who will submit it for clearance by *Chinese Inspection and Quarantine (CIQ).*

To ship alfalfa at competitive prices to China, U.S. exporters need to weigh not only price (which is determined by acres in production, rainfall, harvesting situation and market demands from U.S. and overseas markets) but also trucking and processing costs. After alfalfa arrives at U.S. ports, exporters must figure in Chinese tariffs, shipper and Chinese agent expenses.

In 2001 the Chinese government implemented a policy to waive the 13% value added tax (VAT) on imported baled alfalfa to promote raw milk production. Thus, importers are left to pay the 9% CIF value as tariff on baled alfalfa (Tariff No.: 1214.9000) and 5% on alfalfa meal or pallet (Tariff No.: 1214.1000).

Container vessel transportation is the best choice in terms of cost, speed and protection from the elements. Alfalfa can be sourced from the western states and loaded at U.S. west coast ports, such as Seattle in Washington, Portland in Oregon and San Francisco in California. Shipping costs stay at reasonable levels because Chinese manufactured commodities flood in leaving many empty containers to travel back to China. As Chinese exports to the US grow, some hay exporters believe that ocean freight could drop although rising fuel cost must be factored in. There are highly developed ports available in this region such as Yantian, Shekou and Huangpu. Certain shipping lines only operate out of designated ports. It usually takes about a week for dairy farmers to clear goods with customs and CIQ. Then containers are transported and unloaded on the farms.

Dairy farms, especially the larger ones, prefer to buy directly from U.S. exporters to minimize cost. Nevertheless, a trustworthy import agent is critical for a U.S. exporter who plans to sell products to mid- and small sized farms. These farms tend to purchase small volumes each time and lack staff to handle importation matters. A good agent finds customers and handles payment by L/C. An agent normally charges farms 1-2% handling commission of the total commodity value and about 5% to cover the government mandated resale tax.

Demand for alfalfa depends on increased consumer demand for dairy products. Both the Chinese government and savvy parents recognize dairy products as one of the best sources of nutrients such as calcium and protein, especially for school-aged children and the elderly. Facing strong competition from Ultra Heat Treated (UHT) milk produced by the northern Chinese, South China farms strive to defend and further market share by labeling their pasteurized milk as “fresh milk”, which helps consumers to identify it as a better value product and pay premium prices willingly.

Dairy beverages from a Chinese supermarket

Once the South China market opens to U.S. alfalfa, growth is expected to be significant. According to the *National Hay Association*, baled alfalfa shipment to China is estimated to reach 5,000 MT valued US$ 1 million in 2007. In the foreseeable future, with growth expected to climb 5,000 MT annually, the market could even become comparable to South Korea which imported 128,500 MT valued US$25 million in 2006.

Appendix (6 tables):

1. U.S. exports of alfalfa hay to top three markets and to the world, Calendar Year (CY) 2001-2006 (US$ millions)

	2001	2002	2003	2004	2005	2006
Japan	66.71	114.75	120.99	136.19	125.66	120.83
South Korea	18.44	22.59	21.89	19.97	19.98	25.38
Taiwan	5.01	10.24	7.87	7.89	9.65	10.65
World Total	**95.83**	**153.57**	**158.35**	**171.53**	**165.09**	**164.44**

2. Dairy cattle population and milk production in three South China provinces, CY 2004

Province	Dairy cattle (head)	Milk production (tons)
Guangdong	44,300	109,372
Guangxi	32,000	43,500
Fujian	71,900	214,000

3. Baled alfalfa from Northern China

Crude Protein	16%-17%
Relative Feed Value (RFV)	<140
Origin price	850RMB/ton (US$110/ton)
Trucking cost	650RMB/ton (US$84/ton)
On farm price in Guangdong	1,500RMB/ton (US$194/ton)

Note: 1US$=7.7RMB("renminbi", Chinese currency)

4. Main ports in South China

Port	City, Province
Huangpu	Guangzhou, Guangdong
Nansha	Guangzhou, Guangdong
Shekou	Shenzhen, Guangdong
Yantian	Shenzhen, Guangdong
Fangcheng	Fangchenggang, Guangxi
Fuzhou	Fuzhou, Fujian

5. Alfalfa guidelines

Quality	ADF	NDF	RFV	Crude Protein
Supreme	<27	<34	>185	>22
Premium	27-29	34-36	170-185	20-22
Good	29-32	36-40	150-170	18-20
Fair	32-35	40-44	130-150	16-18
Utility	>35	>44	<130	<16

Note:
1. *ADF: Acid Detergent Fiber; NDF: Neutral Detergent Fiber*
2. *Relative Feed Value (RFV) calculated using the Wisconsin/Minnesota formula.*

6. Documentation required. (For reference only. Always consult and confirm with your Chinese importer.)

(a) For U.S. Exporters:

- Commercial Invoice. It should include the following information:
  - description of goods
  - value of each item
  - name and address of shipper and consignee
  - country of origin
  - place and date of shipment
  - number and types of containers
  - marks & numbers
  - weight (net & gross)

Importer will determine the numbers of copies required.

- Bill of Lading. It should include:
  - name of shipper
  - name and address of consignee
  - destination port
  - description of good
  - all charges
  - number of bill of lading full sets
  - carrier acknowledgement of receipt of shipment
- Packing List. It should indicate weight and content of shipment.
- Phytosanitary Certificate issued by the U.S. Animal and Plant Health Inspection Service (APHIS). For detailed information, please refer to: http://www.aphis.usda.gov/import_export/plants/plant_exports/index.shtml
- Certificate of Fumigation. Contact APHIS for information about qualified fumigators.

(b) For Chinese Importers:
• Import License: an importer must have proper business registration to be allowed to import or export.
• Certificate of Import Phyto Quarantine issued by the *General Administration of Quality, Supervision, Inspection and Quarantine (AQSIQ).* An importer needs to apply for this certificate with the provincial *Department of Inspection and Quarantine (CIQ)* in his area. It is strongly recommended to obtain this certificate before shipping.
• The waiver on Value Added Tax (VAT): it must be applied and issued before an importer clears goods with customs and CIQ at port.